

**REMARKS**

Claims 24-46 are pending in this application. By this Amendment, claims 24, 30, 31 and 35-41 are amended.

Applicant appreciates the courtesies shown to Applicant's representative by Examiner Abdulsalam in the November 10, 2003 personal interview. Applicant's separate record of the substance of the interview is incorporated into the following remarks.

Entry of the amendments is proper under 37 C.F.R. §1.116 since the amendments: (a) place the application in condition for allowance (for the reasons discussed herein); (b) do not raise any new issue requiring further search and/or consideration (since the amendments amplify issues previously discussed throughout prosecution); (c) satisfy a requirement of form asserted in the previous Office Action; (d) do not present any additional claims without canceling a corresponding number of finally rejected claims; and (e) place the application in better form for appeal, should an appeal be necessary. The amendments are necessary and were not earlier presented because they are made in response to arguments raised in the final rejection. Entry of the amendments is thus respectfully requested.

**I. The Claims Define Patentable Subject Matter**

The Office Action rejects claims 24-35 under 5 U.S.C. §103(a) over U.S. Patent No. 5,85,2429 to Scheffer et al. in view of U.S. Patent No. 5,818,557 to Konuma et al. and U.S. Patent No. 6,094,184 to Okamoto; and claims 36-46 under 35 U.S.C. §103(a) over U.S. Patent No. 5,892,495 to Sakai et al. in view of Scheffer et al, Konuma et al. and U.S. Patent No. 6,094,184 to Okamoto. These rejections are respectfully traversed.

Scheffer et al. and Sakai et al. do not teach, disclose or suggest "dividing a first time period which is part of a single frame into a plurality of sub-fields, and in each sub-field, turning on or off of each pixel by applying to the pixel one of two-level signals for a period of sub-field, the cumulation of on periods during the first time period of the single frame being

variably controlled in accordance with a gray-scale level of the pixel for the gray-scale display; and applying an effective voltage to the pixels in a second time period being the remaining time period of the single time frame, in accordance with a threshold voltage of a transmissivity characteristic," as recited in claims 24, and as similarly recited in claims 30, 36, 38, 39 and 41.

Instead, Scheffer et al. discloses that the controller 54 initiates the process for converting the display data stored in storage circuit 72 into column signals having amplitudes beginning at step 82 (col. 72, lines 43-50; col. 21, lines 33-36; col. 26, lines 23-32). Thus, Scheffer et al. does not teach direct application of a sequence of two-level signals to the pixels for the gray-scale display.

Likewise, Sakai et al. does not relate to the recited claim features. Instead, Sakai et al. relates to a scanning circuit provided with a plurality of address lines and circuits.

Konuma et al. does not make up for the deficiencies of Scheffer et al. and Sakai et al. Instead, Konuma et al. relates to a gradation display in which the contrast ratio is obtained at 32 gradations (col. 32, lines 3-16).

Specifically, Konuma et al. does not disclose a second time period in accordance with a threshold voltage of a transmissivity characteristic relative to a voltage applied to electro-optical material used in the electro-optical device. Instead, Konuma et al. merely discloses that 32 gradations can be displayed by combination of the durations of five sub-frame ( $T_o$ ,  $16T_o$ ,  $2T_o$ ,  $8T_o$ ,  $4T_o$ ) in Fig. 14.

Okamoto does not make up for the deficiencies of Scheffer et al. and Sakai et al. Instead, Okamoto discloses "a first portion containing phase-modulated pulses, and a second portion containing fixed-phase pulses" (col. 16, lines 30-38). As shown in Figs. 5(b)-(d), Okamoto's "first portion" phase-modulated pulses are of a fixed pulse duration. Okamoto

phase-modulates by shifting of the pulses, but does not vary the cumulation of "on" periods, as claimed.

Even if variously combined, Scheffer et al., Sakai et al., Konuma et al. and Okamoto do not combine to result in the above-recited claim features.

For at least these reasons, it is respectfully submitted that claims 24, 30, 36, 38, 39 and 41 are patentable over the applied references. The dependent claims are likewise patentable over the applied references for at least the reasons discussed as well as for the additional features they recite. Applicant respectfully requests that the rejections under 35 U.S.C. §103(a) be withdrawn.

In view of the foregoing, it is respectfully submitted that this application is in condition for allowance. Favorable reconsideration and prompt allowance of claim[s] are earnestly solicited.

Should the Examiner believe that anything further would be desirable in order to place this application in even better condition for allowance, the Examiner is invited to contact the undersigned at the telephone number set forth below.

Respectfully submitted,



James A. Oliff  
Registration No. 27,075

Richard J. Kim  
Registration No. 48,360

JAO:RJK/mdw  
Date: April 1, 2004

**OLIFF & BERRIDGE, PLC**  
**P.O. Box 19928**  
**Alexandria, Virginia 22320**  
**Telephone: (703) 836-6400**

<p><b>DEPOSIT ACCOUNT USE</b> <b>AUTHORIZATION</b> Please grant any extension necessary for entry; Charge any fee due to our Deposit Account No. 15-0461</p>
--